What is claimed is

1. A method for measuring blood pressure and pulse rate with a pump-less mechanical compression apparatus, comprising the steps of:

fastening an air bag, which is a closed system with fixed air volume, at the human body;

activating a compression assembly to exert pressure on the closed system air bag and onto the human body;

releasing pressure for returning the air bag to its original state for causing a pressure change inside the air bag and transmitting the pressure change to a sensor for calculating a value;

sending the value to a processor for processing in order to obtain a blood pressure including a contraction pressure and a dilation pressure, and a pulse rate; and

showing the contraction pressure, the dilation pressure, and the pulse rate on a display.

2. The method of claim 1, further comprising an alarm coupled to the processor, the alarm being adapted to issue a warning when the output pressure of the compression assembly, as sensed by the sensor, reaches a limit value.

3. A pump-less mechanical compression apparatus, comprising:

a closed system air bag with fixed air volume fastened at the human body;

a sensor coupled to the air bag for sensing pressure change inside the air bag;

a processor for processing the pressure change;

a display for showing the measured contraction pressure, dilation pressure, and pulse rate; and

a compression assembly;

whereby activating the compression assembly to exert pressure on the closed system air bag and the human body will cause a pressure change inside the air bag and, meanwhile the pressure changes are transmitted to the sensor and the processor for processing sequentially when the compression assembly is deactivated so as to calculate a contraction pressure, a dilation pressure, and a pulse rate, and show the contraction pressure, the dilation pressure, and the pulse rate on the display.

4. The pump-less mechanical compression apparatus of claim 3, wherein the compression assembly comprises:

a holed, annular seat including a lower and a central cavity for receiving the air bag, two opposite, upper arc walls around ahole of the seat, and two opposite slots, an abutment disk on top of the air bag, and a sleeve-like moveable member on the abutment disk, the moveable member being moveable within a predetermined distance to and fro in a_hole of the seat, the moveable member having internal threads and two opposite projections on its outer surface, the projections being slidably fitted in the slots;

a force exertion assembly for exerting force on the moveable member or stopping exerting force thereon, the force exertion assembly including an annular, a hole, a turning member including

a central, a externally threaded extension in an underside, wherein the externally threaded extension being threaded coupled to the internal threads, an annular flange around the hole of the turning member, and a ring put on the flange, the ring having a plurality of spaced external hooks;

a gear including a ratchet section on an underside for catching and holding the hooks, and an annular, a toothed section on a top;

a speed regulator including a shaft having threads coupled to the toothed section, a cylinder having external threads coupled to the shaft, and a weight on the cylinder; and

a mainspring around the arc walls, and further comprising a duct coupled to and being in communication between the air bag and the sensor,

whereby exerting pressure on the air bag will turn the turning member with a predetermined times, move the internal threads and the moveable member downward, move the abutment disk downward, contract the air bag to press on the human body, transmit the pressure change inside the air bag to the sensor via the duct, coil the mainspring, and maintain the gear to be motionless; or stopping exerting pressure on the air bag will uncoil the mainspring, allow the air bag to expand against the abutment disk to move the moveable member upward, rotate the turning member in a direction opposite to that in the pressure exertion, and rotate the ring and the gear.

5. The pump-less mechanical compression apparatus of claim 4,

further comprising a deactivation assembly including a lever element having a pivot, a connecting element at one end coupled to the cylinder, a trigger element at the other end, and resilient means wherein responsive to exerting force on the trigger element, the pivot element moves downward for compressing the resilient means, the lever element pivots about the pivot for causing the connecting element to lift and the cylinder to slant for disengaging quickly from the shaft, a rotation of the toothed section is unrestricted, the compressed air bag is changed quickly to an uncompressed state, and the resilient means is expanded to cause the deactivation assembly to return to its original state.